

CASE SCENARIOS

“ Using Validation Findings to Improve HAI Surveillance and Prevention Distance Learning Course” - September 2012

No.	Scenario	Answers / Rationale
1	<p>A patient with a PICC line inserted 5 days ago spikes a fever to 39.5C. No other signs of infection are evident. Blood cultures are ordered. The lab reports 1 bottle growing <i>Staphylococcus epidermidis</i>.</p> <p>The patient remains the same over the next 24 hours. Again blood cultures are ordered. The lab reports 1 bottle growing <i>coagulase-negative staphylococci</i></p> <p>Q: Is this a CLABSI? If so, what is the causative pathogen reported to NHSN?</p>	
2	<p>Your facility is identifying CDI cases using a 2-step testing process.</p> <p>Q: How would you report a test that is antigen positive, but toxin negative?</p>	
3	<p>A patient has a central line inserted in the ED before being admitted to the MICU. He showed no clinical signs or symptoms of sepsis upon arrival to the ED. Within 24 hours of admission to the MICU, the patient meets criteria for BSI.</p> <p>Q: How would this be reported to NHSN and what is the location is recorded in the Event record?</p>	
4	<p>A 37 year-old male with a known history of drug and alcohol abuse was re-admitted 35 days following an appendectomy performed at the same hospital. He was complaining of nausea, poor appetite, abdominal tenderness and continued drainage from the surgical wound margin that began 2 weeks prior to presentation at the hospital. An abdominal CT revealed an intra-abdominal abscess with fistula. The patient was taken for an exploratory laparotomy.</p> <p>Cultures from the abscess grew <i>Escherichia coli</i> and <i>Staphylococcus aureus</i>, methicillin resistant.</p> <p>Blood cultures grew <i>Staphylococcus aureus</i>, methicillin resistant.</p> <p>Q: What, if anything, needs to be reported to NHSN?</p>	

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5	<p>Mr. Jones, a 52 year old male smoker, had been in the hospital with pneumonia for 5 days. He was discharged on levofloxacin.</p> <p>Twenty-four hours after discharge, he was seen in the emergency department complaining of voluminous watery diarrhea every 1-2 hours. His stool specimen from the ED was <i>C difficile</i> toxin assay positive. He was treated with IV fluids and metronidazole and sent home to follow up with his primary physician.</p> <p>He returns to the hospital one week later. Admission <i>C difficile</i> tests are positive.</p> <p>Q: Per California requirements, what is the correct way to report this to NHSN?</p>	
6	<p>Mr. South was status post bowel resection surgery, secondary to removal of a small bowel tumor. A right subclavian line was inserted during surgery. He had a temporary ileostomy and an abdominal Jackson-Pratt drain. He was extubated on post-op day #1. Lungs are clear. On day 4, he developed a 101 °F fever, chills. WBC 22,000. Abdominal CT was negative. Blood cultures were drawn and antibiotics started.</p> <p>On day 6, the blood culture shows <i>E. coli</i>.</p> <p>Q: Is this a CLABSI?</p>	

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7	<p>On August 22, a 27 year old man with alcohol-induced pancreatitis is admitted from another hospital. Admission abdominal CT showed severe pancreatitis with peripancreatic inflammatory changes. Patient is ventilator-dependent, requiring a tracheostomy and has a central vascular catheter in place in the right IJ vein.</p> <p>On September 3, an aspiration of pancreatic fluid revealed few polymorphonuclear cells and a negative bacterial culture.</p> <p>On September 11, a repeat abdominal CT revealed unchanged pancreatitis but development of fluid collection in the abdomen.</p> <p>On September 14, patient is taken to the operating room for pancreatic debridement and placement of drains. Later that evening, patient had a temperature spike to 102°F. The right IJ line was discontinued, and the catheter tip and blood specimens were sent for culture.</p> <p>On September 16, culture results were reported as follows:</p> <ul style="list-style-type: none"> ○ Pancreatic fluid no growth; ○ Catheter tip, 15 colony-forming units of <i>Enterococcus</i> species; ○ Two blood culture bottles positive for <i>Enterococcus faecalis</i>. <p>No other sites of suspected infection were identified.</p> <p>Q: Does this patient have a health care-associated infection (HAI)?</p> <ol style="list-style-type: none"> a. No, these organisms are contaminants. b. Yes, an intra-abdominal (IAB) infection with secondary bloodstream infection (BSI) with <i>Enterococcus</i> species. c. Yes, a central line-associated BSI (CLABSI) because the blood and catheter tip cultures grew the same organisms. d. Yes, a CLABSI because the blood cultures are positive for a pathogen (<i>E. faecalis</i>), there is no evidence of infection at another site, and the patient had a central line in place. <p style="text-align: right;">[American Journal of Infection Control, June 2010]</p>	

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8	<p>On December 5, a 35 year old man is involved in a multiple vehicle accident and sustains multiple internal and external traumatic injuries. On arrival at the emergency department, a triple-lumen subclavian line and Foley catheter are placed. Once stabilized, the patient is transferred to the intensive care unit.</p> <p>On December 8, the patient spikes a temperature to 101°F and is pan-cultured, including two blood cultures.</p> <p>On December 10, the subclavian line is discontinued, and the catheter tip is sent for culture. Later that afternoon, the blood culture results from December 8 are reported as <i>Staphylococcus hominis</i> in both sets, with different susceptibility profiles. The physician notes: “Positive blood culture contaminant; no antibiotics required.” All other specimens cultured are negative.</p> <p>On December 12, catheter tip results are reported as <i>Staphylococcus epidermidis</i>.</p> <p>Q: Is this a CLABSI per NHSN surveillance criteria?</p> <ol style="list-style-type: none"> No, because the blood cultures grew only common skin contaminant organisms. Yes, a central line-associated bloodstream infection (CLABSI) because both the blood and catheter tip cultures grew coagulase-negative staphylococci. No, because the ID consulting physician stated that the blood culture results were contaminants and did not treat the patient with antibiotics. *Yes, a CLABSI because the patient had a central line in place, had a fever, and there were 2 positive blood cultures with a common skin contaminant organisms, collected within two days of each other. 	
9	<p>Same as scenario 8 above, except the subclavian line tip culture instead grows <i>Staphylococcus hominis</i>.</p> <p>Q: Does this finding change your HAI assessment?</p>	

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10	<p>A 64 year-old man who is status-post heart transplant 16 years ago is admitted on February 1 for PEG tube placement. Medical history is significant for respiratory failure due to H1N1 influenza pneumonia resulting in a tracheostomy and ventilator dependency. He has end-stage renal disease (on hemodialysis three times/week) and hypertension. He is a transfer from the ventilator unit of a long-term acute care facility (LTAC).</p> <p>On hospital admission, he has a left internal jugular (IJ) tunneled catheter used for dialysis, and a condom catheter that is draining clear amber urine.</p> <p>On February 2, patient was taken to the OR for placement of a PEG feeding tube and tolerated the procedure well. He was transferred to the Surgical ICU due to his ventilator requirement and weaning was completed. Temperature range was normal. Lungs clear bilaterally. PEG site oozing serosanguinous drainage.</p> <p>On February 3, the patient was transferred to the Surgical Step-down Unit. A call received from the LTAC facility that a stool specimen collected for abdominal pain and diarrhea prior to transfer was reported as positive for <i>C. difficile</i>. Metronidazole treatment was started.</p> <p>Q: Should this positive <i>Clostridium difficile</i> specimen be entered in the NHSN? If yes, to which care unit (location) should it be attributed?</p>	
11	<p>A 41 year-old man presented to the emergency department on August 14 in a diabetic coma and with severe anemia. He had a right external jugular catheter inserted in the ED.</p> <p>The next day in the medical ICU, he had a midline catheter inserted in the right upper extremity.</p> <p>On August 21, shortly after he was transferred to the telemetry unit, he developed a fever to 39 C and shaking chills. Two sets of blood cultures were submitted.</p> <p>On August 24, blood cultures were positive for <i>Staphylococcus aureus</i> (resistant to oxacillin). Neither of the central line insertion sites showed inflammation and there was no other documented infection.</p> <p>Q: How should this case be reported to submitted to NHSN? If so, which module and to what location should the infection be attributed?</p>	

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12	<p>An 84 year-old woman with mild Alzheimer’s disease was hospitalized on the telemetry unit with upper GI bleeding.</p> <p>On hospital day 3, her records indicate that she was hemodynamically stable, had a central venous catheter in the right internal jugular vein and an indwelling catheter was in the urinary bladder.</p> <p>On day 6, she became unresponsive and hypotensive. She was nasally intubated placed on a ventilator, and transferred to the ICU. WBCs were 15K. Temp was 37.6. Two sets of blood cultures were drawn (10 minutes apart) and urine collected for culture.</p> <p>49 hours later, both sets of blood cultures and the urine ($>10^5$CFU/ml) were reported to be positive for Gram-positive cocci in chains (viridans streptococci on final report).</p> <p>Q: Is this a CLABSI, and if so, what location would it be attributed to in the NHSN?</p>	
13	<p>A 1 day-old neonate, with clinical signs and symptoms of sepsis status post prolonged delivery, meconium staining, and an APGAR of 6, was transferred to a level III nursery. An umbilical line had been placed by the transferring facility 5 hours before the arrival of the patient.</p> <p>At the receiving hospital, blood cultures were drawn and the sepsis protocol was initiated. The cultures revealed <i>Enterococcus gallinarum</i>, vancomycin resistant. The patient’s antibiotic regimen was adjusted.</p> <p>Q: Which, if any, of these two California hospitals need to report this event?</p>	
14	<p>An admitted patient underwent an abdominal hysterectomy (HYST), oophorectomy (OVR) and exploratory laparotomy (XLAP) through the same incision line. 10 days after surgery the patient developed a fever, complained of pelvic pain, and an abscess was noted on imaging. An SSI must be reported to NHSN.</p> <p>Q: What type of SSI and to which procedure should it be attributed?</p> <ol style="list-style-type: none"> Deep Incisional SSI Organ/Space SSI-HYST Organ/Space SSI-OVR Organ/Space SSI-XLAP 	

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15	<p>Jenny, a 5 year-old pediatric patient, undergoes a T2-L3 spinal fusion procedure on February 8.</p> <p>Q: What NHSN spinal fusion level would you enter for this procedure's denominator data?</p> <ul style="list-style-type: none"> a. Cervical / Dorsal / Dorsolumbar – extends from any cervical lumbar through any lumbar levels b. Dorsal / Dorsolumbar – T1–L5 (any combination of thoracic and lumbar) c. Lumbar / Lumbosacral – L1 – S5 (any combination of lumbar and sacral) 	
16	<p>Mrs. Thomas is a patient in your ED on March 10. She is not admitted to the hospital, but a stool specimen obtained in the ED is later found to be positive for <i>C.difficile</i> toxin.</p> <p>On March 28, Mrs. Thomas is admitted to your hospital for abdominal pain and cramping. A stool specimen from March 29 is positive for <i>C.difficile</i>.</p> <p>Q. Per California reporting requirements, how should this CDI be reported to NHSN? Based on the NHSN CDI algorithm, would the reported CDI be classified as CO, CO-HCFA or HO?</p>	
17	<p>Ms. Dell was admitted to the palliative care unit of your hospital for pain management related to advanced colon cancer. Her right subclavian PORT-A-CATH® was accessed on admission for medications and a slow IV infusion. The family requested only "comfort care" be instituted. As she had a recent history of VRE in her stool, Mrs. Dell, was placed in contact precautions per hospital policy.</p> <p>On fourth day of her hospitalization, Ms. Dell was warm to the touch, diaphoretic and complaining of generalized pain, which was poorly controlled with her usual medication regime. Although the family had requested no routine blood work, they agreed to the drawing of a set of blood cultures, which indicated VRE sepsis. When you reviewed the NHSN HAI Manual, this case meets the NHSN criteria for CLABSI.</p> <p>Q: Is this CLABSI an HAI that should be reported by your hospital?</p>	

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18	<p>A premature infant of 590 grams was delivered by Caesarian section on December 19 and transferred to the NICU on ampicillin and cefotaxime. Blood cultures drawn were negative.</p> <p>On December 27, an intestinal perforation was suspected and a peritoneal drain was inserted. A PICC was inserted and blood cultures drawn were again negative. However, the patient was started on 14-day treatment with vancomycin, cefotaxime and metronidazole.</p> <p>Over the ensuing weeks, the following micro labs results showed</p> <ul style="list-style-type: none"> ○ Jan 2 - Respiratory culture, negative ○ Jan 6 - Urine culture, negative ○ Jan 6 - Blood cultures, negative ○ Jan 8 - Respiratory culture, negative ○ Jan 14 - Blood cultures, negative <p>By mid-January, it was felt the presumed intestinal perforation had resolved.</p> <p>On February 1, a blood culture was positive for <i>Citrobacter freundii</i> and <i>Enterococcus faecalis</i> (both non-resistant antibiograms) and the patient was started on vancomycin, gentamicin and metronidazole.</p> <p>Eventually the patient was transferred to another hospital with clinical note indicating “presumed necrotizing enterocolitis”.</p> <p>Q: Is this CLABSI?</p>	
19	<p>A patient was admitted to your hospital on April 12 for elective small bowel resection. The MRSA active surveillance screen of the patient’s nares prior to surgery was positive. The post-operative course was unremarkable and the patient was discharged to home on April 16.</p> <p>On April 30, you received word from another hospital that the patient was admitted to that facility on April 29 with a red, “angry” surgical wound. The medical staff opened the incision into the fascia and sent a swab for culture. MRSA grew from the specimen.</p> <p>Q: Is this a new HAI? If yes, what type of HAI and does your hospital need to report it?</p>	
20	<p>Same scenario as 19 above.</p> <p>Q: What should be reported as the date of onset of the infection?</p>	

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21	<p>A 79-year-old male patient was admitted with a fractured neck of femur following a fall in a nursing home. The transfer notes state the patient is colonized with MRSA. Consequently, while the patient was still in the ED, MRSA screening cultures were taken from the nose and groin per hospital policy. He was taken to surgery and a hip replacement procedure (HPRO) was performed.</p> <p>On post-op day 2, the patient became confused. MRSA active surveillance cultures were reported as positive. Nursing notes indicated the patient began picking at his wound and the dressing had to be replaced twice.</p> <p>On post-op day 5, clinical note states, “Abscess at upper aspect of incision lanced by surgeon. Purulent material obtained for C&S submitted.” Ancef IV was started.</p> <p>On post-op day 6, MRSA was identified in the wound culture. The antibiotic was changed.</p> <p>On post-op day #9, the wound is showing improvement.</p> <p>Q: Is this an HAI? If so, how would it be entered into the NHSN?</p>	
22	<p>A 75 year-old was admitted with uterine cancer and is scheduled for elective abdominal hysterectomy (HYST) and removal of a tumor on the colon (COLO).</p> <p>Q If both surgeries are done through the same surgical incision during this operation, how is the duration of surgery recorded?</p>	
23	<p>Same scenario as 22. On post-op day 5 the patient has a temperature of 38°, abdominal pain, and nausea. An ultrasound guided aspiration of the fluid collected from the abdomen had many neutrophils and grew <i>Enterococcus faecalis</i>.</p> <p>Q: Is this an HAI, and if so, for which procedure to you record it?</p>	

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24	<p>Mr. H., a 392 lb insulin dependent diabetic, was three days post lumbar spinal fusion at L2-L4 when he developed a productive cough and low-grade temperature. His blood sugar had been in the high 200s.</p> <p>By day 5, his cough continued; sputum was now yellowish green and increased in amount. Temperature was 38.4°C. CXR showed an infiltrate in the right lower lobe. His surgical incision was reddened, warm and tight. Insulin dosage had been increased in response to the elevated blood glucose levels. He had been started on antibiotics for pneumonia.</p> <p>On day 6, a culture of his sputum grew <i>Klebsiella pneumoniae</i>. While ambulating and coughing, Mr.H's lumbar wound dehiscd. Pus was noted within the deep incision. He was taken back to the OR emergently for exploration, debridement and irrigation of the structures and hardware involved in the surgery and re-closure. Operative note stated that moderate amounts of purulent material was encountered in epidural space and sent for culture. The wound was copiously irrigated and closed around a drain. The culture obtained in the OR grew <i>K. pneumoniae</i>.</p> <p>Q: Which is true?</p> <ol style="list-style-type: none"> Mr. H has a organ/space SSI, reported as SSI-SA (spinal abscess). Mr. H does not have reportable SSI because the source of the infection came from his pneumonia (e.g. wound infection secondary to lung infection). 	
25	<p>On April 12, a 16 year-old boy was admitted for emergent appendectomy. As the abdomen was entered the appendix ruptures. An appendectomy with copious irrigation of the abdomen was performed. An abdominal JP drain was placed through a separate stab incision.</p> <p>The patient did well with bowel sounds returning. On post-op day 2 the drain was no longer producing fluid, so it was removed. The skin around the drain was noted to be mildly reddened.</p> <p>On post-op day 3, the patient was afebrile and doing well on a soft diet.</p> <p>On post-op day 4, the drain site was irritated and reddened and a small amount of pus was noted upon cleaning the stab wound.</p> <p>Q: Does this patient have a HAI?</p>	

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26	<p>While reviewing a medical record to follow-up on a positive culture line list provided by the lab, the IP notices a discrepancy. The patient's location noted in the medical record at the time the specimen was collected does not match the location noted on the lab line listing. The IP uses the lab line list provided when reporting Events to NHSN.</p> <p>Q: What are some reasons for this discrepancy?</p>	
27	<p>The ED medical record notes an order for a stool specimen for <i>C. difficile</i> testing. Date of specimen collection in the ED record was recorded as March 11. On lab-produced line list used by the IP to identify CDI cases, the specimen date is recorded as March 12. The patient was admitted to the hospital on March 12. The IP is concerned about this discrepancy because it affects whether the CDI should be reported as a LabID event to NHSN per California requirements.</p> <p>Q: What are some reasons for this discrepancy?</p>	
28	<p>An elderly patient admitted on October 25 has a central line, is receiving TPN, and has a Foley catheter to “minimize her getting out of bed and the possibility of falling.”</p> <p>On November 1, her physician orders pan-cultures. Results show a urine culture growing 10,000 CFU of <i>Serratia marcescens</i>. All other cultures are negative. She responds “no” when asked about feeling bad and other symptoms, and is afebrile.</p> <p>Q: Is this a UTI by NHSN criteria and if so, what type?</p>	